

# HAWAII LIFE SCIENCES



**HAWAII**  
LIFE SCIENCES



## **DISCOVER THE ISLANDS OF ALOHA**

Welcome from the Governor



Aloha!

In keeping with Hawai'i's long history of scientific discovery, we are pleased to welcome a new and expanded life science sector to our state. For centuries, Native Hawaiians led the world in what we would now call aquaculture and crop management. Today, the Aloha State is internationally known for its cutting-edge research in fields such as astronomy, optics, ocean and marine technologies, biotechnology, biomedicine, genetic engineering and dual-use technologies.

One of my Administration's top priorities is fostering the growth of new businesses in emerging sectors. Over the past year, we planned ways to encourage a vital life sciences sector that attracts world-class research and development efforts. We now have critical tools in place to support that sector, such as our generous high technology tax credit program and a new capital investment fund.

Hawai'i's "open for business" sign is turned on. We invite you to discover for yourself the many advantages of doing business in the Aloha State.

Mahalo nui loa!

A handwritten signature in black ink, reading "Linda Lingle".

LINDA LINGLE  
Governor  
State of Hawai'i



## **DISCOVER THE ISLANDS OF DISCOVERY**

Welcome from the Department of Business, Economic Development & Tourism

Aloha!

The State of Hawai'i is poised to advance life sciences into a thriving industry. The indicators for growth are abundant and the list of Hawai'i's competitive advantages in key niches is growing daily.

Hawai'i is now home to hundreds of trained researchers with expertise in agricultural, medical, marine, and tropical life sciences ready to transform the results of R&D efforts into commercial products.

Local life sciences firms are conducting both basic and applied research in molecular and nuclear biology, as well as immunochemistry, leading to the genetic engineering of antibodies and other high-value, complex proteins for commercial production.

Hawai'i's favorable climate and ocean setting is ideal to grow and experiment with many different kinds of terrestrial and ocean plants and animals to market on a global scale.

We invite you to explore why Hawai'i can be your strategic partner for life sciences business; research; and education and training opportunities. Let the Department of Business, Economic Development & Tourism (DBEDT) help you *Discover the Islands of Discovery*.

A handwritten signature in black ink, appearing to read "Theodore E. Liu".

Theodore E. Liu  
Director  
Department of Business, Economic Development & Tourism





# Hawaii's Life Sciences Advantages

## AGRICULTURE

- Year-round growing season
- Most active state in crop trials
- Ideal subtropical to cold water aquaculture environments

## MARINE

- Extensive range of readily accessible biodiversity
- Leaders in commercial microalgae production
- World class infrastructure: University of Hawaii, Natural Energy Laboratory of Hawaii Authority, The Oceanic Institute...and more

## MEDICAL

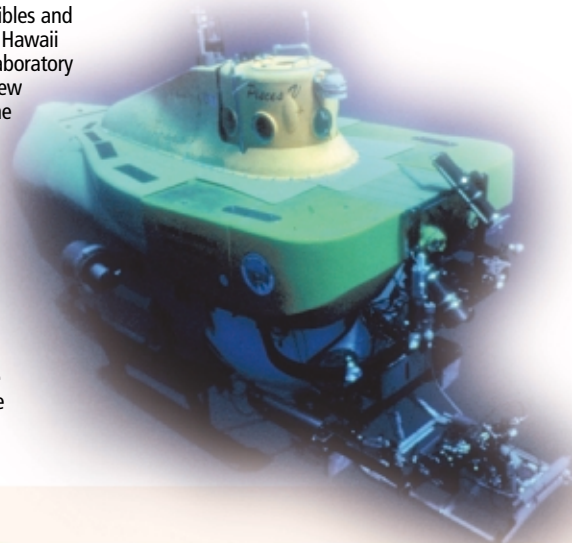
- Expanding UH Biomedical Research Center anchoring new biotech park
- Ethnically diverse population ideal for clinical trials and contract research
- Fertile ground for biopharmaceutical prospecting

## ENVIRONMENTAL

- Ideal subtropical conditions for Asia-Pacific targeted technologies
- Established regulatory protocols

**Hawaii has the most generous package of high tech incentives in the country.**

The manned submersibles and ROV capability of the Hawaii Undersea Research Laboratory extend the hunt for new compounds to extreme environments.



The UH College of Tropical Agriculture and Human Resources and the private Hawaii Agriculture Research Center provide facilities and expertise for research and commercialization of new products, such as the Tropic Fire anthurium.



Recent developments in molecular biology and bioprocess engineering at the University of Hawaii under the Agriculture-Based Remediation Program, offer new methods of selecting organisms and designing innovative processes so that greater amounts and wider varieties of chemicals and wastes can be treated in less time.



The new Pauley-Pagen laboratory at the Hawaii Institute of Marine Biology offers expanded facilities for biodiversity and biotechnology research.



# Infrastructure Natural Resources Stability Commitment

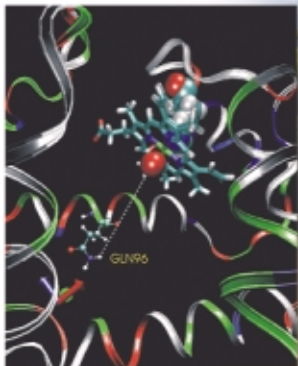
The Natural Energy Laboratory of Hawaii Authority, a State facility, provides cold pure seawater and excellent growing conditions for microalgae, SPF shrimp and a variety of cultured organisms.



The Oceanic Institute, a private, non-profit research, training and tech transfer facility, focuses on aquaculture and marine biotechnology.



Phase I of the University of Hawaii's Biomedical Research Center is under construction (completion in 2005) and will anchor a biotech research park, including a proposed State Biotech Innovation Center and privately developed research facilities.



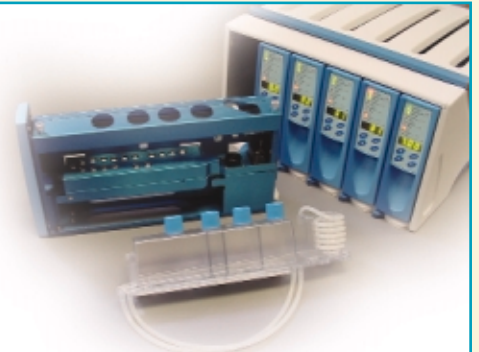
The Maui High Performance Computing Center, an Air Force Research Laboratory Center managed by the University of Hawaii, is ranked as one of the top supercomputer sites in the world. MHPCC provides world-class, parallel computing capability that supports the convergence of IT and biosciences.



# A Snapshot of Hawaii's Life Sciences Industry



Companies such as Hawaii Biotech, Inc. conduct internationally acclaimed research, including pioneering work in producing a high quality protein used at Harvard Medical School for structural studies of the dengue fever virus. This collaborative research was featured on the cover of *Nature*.



Tissue Genesis, Inc. is one of the Hawaii companies specializing in tissue engineering. An innovative automated cell and tissue culture platform will soon be available to the clinical and research markets.



Hawaii's ideal growing conditions, with desert to tropical environments, permit multiple crops per year, cutting the time from field trials to market for new products by up to two-thirds.

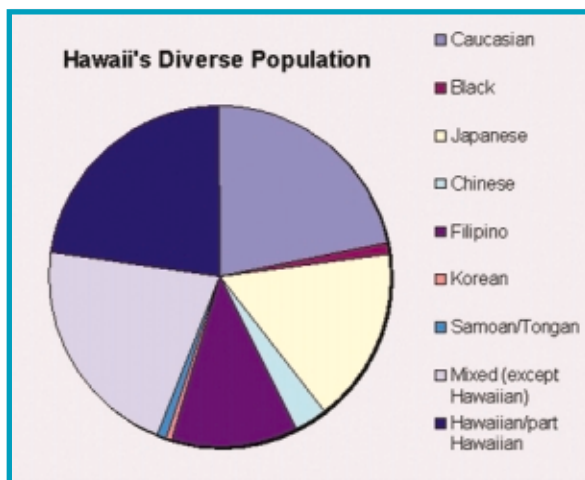


Through research by the U.S. Shrimp Consortium managed by Hawaii's Oceanic Institute and production by companies by such as Kona Bay Marine Resources, Inc. and High Health Aquaculture, Inc., Hawaii has become a leader in the development of Specific Pathogen Free (SPF) shrimp to stock production facilities around the world.



New technologies are being developed to monitor and diagnose patients. STI Medical Systems, Inc. has developed a new modality in the diagnosis and treatment of cancer, using non-invasive HyperSpectral Diagnostic Imaging technology (top) to detect cancer at the cellular level.

Hoana Medical, Inc. is developing a vigilance system to observe and analyze patient physiological conditions without electrodes, cuffs or leads (bottom).



Hawaii's multi-ethnic population supports a wide variety of clinical trials. Companies such as Hawaii Pacific Health Research Institute, in alliance with Quintiles, facilitate trials that meet both U.S. and Japan regulatory requirements.



State of Hawaii

**Department of Business, Economic Development & Tourism**

P.O. Box 2359, Honolulu, Hawaii 96804

Phone: 808-587-2690 Fax: 808-587-2777

[www.hawaii.gov/openforbusiness/lifesciences](http://www.hawaii.gov/openforbusiness/lifesciences)